

### REMARKS/ARGUMENTS

Applicant and the assignee of this application are required under 37 CFR 1.105 to provide information that is reasonably necessary to the examination of this application:

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#### **Response:**

The applicant would like to provide the following keywords that are helpful in locating publications related to the disclosed art of developing a nitride-based light-emitting device:

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Keywords: "buffer layer", nitride, light-emitting diode

A prior art publication that was relied upon for the background material for the disclosed subject matter is US Patent 5,290,393, issued on March 1, 1994 to Shuji Nakamura, and entitled "Crystal growth method for gallium nitride-based compound semiconductor".

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The following is a description of the state of the prior art:

The prior art nitride-based light-emitting device includes a nitride-based buffer layer of group AlGaInN formed over a sapphire substrate, and undergoes a nitride-based epitaxy process on the nitride-based buffer layer. The prior art nitride-based buffer layer epitaxy process is a two-step growth method, which utilizes low-temperature (about 600°C) GaN for forming a polycrystalline buffer layer, a heating process (reaching a temperature of 1000°C) for effecting crystallization, and an epitaxy process for each GaN epitaxy stack layer.

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When drafting this patent application, a prior art search was performed, and two patents were found in the search: US Patent 5,122,845 entitled "Substrate for growing gallium nitride compound-semiconductor device and light emitting diode " and US Patent 5,686,738 entitled "Highly insulating monocrystalline gallium nitride thin

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films". However, the applicants believed that the found patents were not relevant to the patentability of the instant application, and the claimed invention is patently distinguishable from the prior art and should be allowable in view of the prior art.

5 Sincerely yours,



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15 D.C. is 13 hours behind the Taiwan time, i.e. 9 AM in D.C. = 10 PM in Taiwan.)